

ENCEPHALITIS, ARBOVIRAL

Arboviral infections are viruses transmitted to humans by an arthropod vector, usually a mosquito. These infections may be asymptomatic or result in a febrile illness of variable severity associated with neurologic symptoms ranging from headache to aseptic meningitis or encephalitis. Arboviral encephalitis is characterized by fever, headache, and altered mental status ranging from confusion to coma with or without additional signs of brain dysfunction. Arboviruses causing encephalitis in the United States include: St. Louis encephalitis, Western equine encephalitis, Eastern equine encephalitis, California Group encephalitis (includes LaCrosse virus), and West Nile Virus. Any central nervous system infection transmitted by mosquitoes, ticks or midges is reportable both nationally and to the state as an unusual occurrence.

Laboratory Criteria for Confirmation:

- ?? Fourfold or greater change in virus-specific serum antibody, **OR**
- ?? Isolation of virus from or demonstration of specific viral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid, **OR**
- ?? Virus-specific IgM antibodies demonstrated in CSF by antibody-capture enzyme immunoassay (EIA) **OR**
- ?? Virus-specific IgM antibodies demonstrated in serum by antibody-capture EIA and confirmed by demonstration of IgG antibodies in the same or a later specimen by another serologic assay.

Case Classification

Confirmed: A clinically compatible case that is laboratory confirmed.

Probable: A clinically compatible case occurring during a period when arboviral transmission is likely, and with the following supportive serology: a stable (? twofold change) elevated antibody titer to an arbovirus (e.g., ? 320 by hemagglutination inhibition, ? 128 by complement fixation, ? 256 by immunofluorescence, and ? 160 by neutralization, or ? 400 by enzyme immunoassay IgM).

In Kentucky

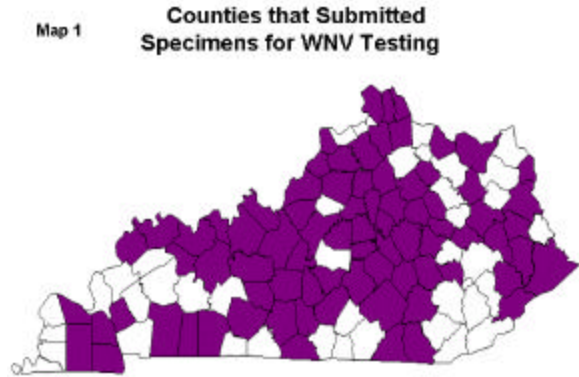
There were no confirmed or probable cases of arboviral encephalitis in Kentucky during 2001. The Kentucky Department for Public Health, Division of Laboratory Services, received 31 samples for testing and reports from private laboratories were received on three other patients.

West Nile Virus in Kentucky

The Kentucky Department for Public Health (KDPH) in cooperation with the Department of Fish and Wildlife Resources (DFW), the local health departments, the University of Kentucky Livestock Disease Diagnostic Center (UKLDDC), the Kentucky Department of Agriculture, the United States Department of Agriculture (USDA), veterinarians and private citizens completed a successful surveillance effort for West Nile virus in 2001.

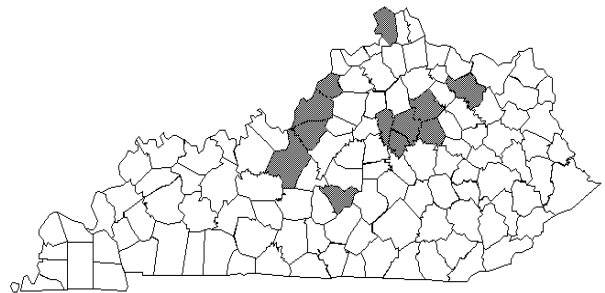
Kentucky reported the first confirmation of the virus in the state on August 31 with a positive IgM ELISA test from a horse in Bourbon County. From that date through November 30, 7 additional horses, 43 birds and 6 mosquito pools were reported positive for West Nile virus.

Map 1 shows all the counties that submitted either birds, equine samples or participated in mosquito collection. Counties that had confirmed positive birds, mosquito pools or equine samples are depicted on Map 2.



Map 2

Counties with Positive WNV Results: Birds, Equine, or Mosquitoes



Positive Birds: Boone, Clark, Fayette, Hardin, Jefferson, Jessamine, Oldham, Taylor, and Oldham.

Positive Horses: Bourbon, Bullitt, Fayette, Fleming, Jefferson, Jessamine, Oldham, and Woodford.

Positive mosquito pools: Fayette and Jefferson